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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Henry F. McInerney, et al.  
Serial No: 09/556,280  
Conf. No. 7997  
Filed: April 24, 2000  
For: PORTABLE AUTHENTICATION DEVICE AND METHOD OF  
AUTHENTICATING PRODUCTS OR PRODUCT PACKAGING  
Examiner: Rosenberger, Richard A  
Art Unit: 2877

Commissioner For Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION OF MOHAMMAD FARAHAT UNDER 37 C.F.R. §1.132**

Sir:

I, Mohammad Farahat, declare that:

1. I received a Bachelor of Science degree in Chemical Engineering from Rensselaer Polytechnic Institute, a Master of Science degree in Chemistry from Worcester Polytechnic Institute and a Doctor of Philosophy degree in Chemistry from Boston University and have been working in the field of fluorescence detection, spectroscopic analysis and product security since 1993.
2. I have been employed with Sun Chemical Security, Inc., which is the Assignee of the present application, for approximately one year and am presently the Director of Research & Development. My duties include the investigation, conceptualization, design, prototyping, development and testing of specialized materials and authentication devices for use in brand protection and product security. My duties also include the supervision of a team of scientists and engineers also responsible for the duties described above. I keep current with activities in the security/authentication arena and regularly read competitive materials and literature concerning the latest technical advances in the field.

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3. Prior to joining Sun Chemical Security, Inc., I was employed with PhotoSecure, Inc. of Boston, MA where I was the Chief Technical Officer from 2002-2003 and a Scientific Consultant from 2000-2002. My duties at PhotoSecure included the management of all technical aspects (including research, development, production and quality control) of specialized security materials and devices for security marking and supply chain monitoring and the development of stationary and hand-held authentication devices for printed invisible markings.
4. Prior to joining PhotoSecure, I was employed with various companies responsible for the design and development of various spectroscopic analytical instruments and devices. My Postdoctoral Fellowship was conducted at the NSF Center for Photoinduced Charge Transfer at the University of Rochester, Rochester, NY. My research dealt with transient spectroscopy of dyes and aggregates in organized media.
5. My relevant technical experience also includes: electro-optic instrument design and development; electronic imaging; multivariable statistical analysis of spectroscopic data; chemometric methods development; steady state spectroscopy including UV, VIS, NIR, MIR, luminescence and Raman techniques; time-resolved laser-based absorption and emission spectroscopy; Langmuir-Blodgett film fabrication and analysis; multi-step organic synthesis; scanning tunneling microscopy; computational chemistry; FT-NMR; spectral oil analysis; and related electronics circuit design, software design and programming, and computer interfacing.
6. I have studied the above-referenced patent application (US Serial No. 09/556,280) and the prior art references applied in the current Office Action (mailed June 8, 2005) and in particular US Patent 5,719,948 to Liang and US Patent 4,202,491 to Suzuki.
7. Liang is directed to an apparatus for fluorescent imaging and optical character recognition that employs an authentication device having an ultraviolet light source and a device for capturing and recognizing graphic images made with fluorescent substances that fluoresce after excitation with the UV light. Liang also discloses that the authentication device can have an optional visible/IR light source. Liang teaches images made fluorescent from UV light and images that result from IR reflectance in response to illumination from the visible/IR light source.

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8. Suzuki is directed to a data card having data recorded with an infrared fluorescent material. Suzuki also discloses a reader whereby infrared rays 7 are introduced into a detector 9 by a glass fiber 8. A filter 10 is placed in front of the detector such that "only light *favorable* for the wavelength characteristics of the detector is guided to the detector 9." Suzuki also notes that the "filter 10 and detector 9 are appropriately selected in *dependence* on the kind of infrared-infrared fluorescent material." (See col. 6, lines 18-27, emphasis added.) Thus, the chosen Suzuki fluorescent material is limited to the specific detector employed in the reader. That is, only those wavelengths that are optimum for the reader are utilized. In my view, the Suzuki reader does not and cannot read *all* of the wavelengths in the IR range for a given fluorescent material. Rather, it can only read a favorable and select few.

9. The device of the present invention is capable of detecting *any* IR light emission having any intensity at any wavelength including peak and non-peak emission wavelengths. Thus, the detector of the present invention is not limited to a specific subset of wavelengths within the IR range, as would be the case with a modified Liang/Suzuki device. Rather, the device of the present invention can detect any of the light emissions within the IR range. This is advantageous because the detector can even read faint fluorescent emissions at any wavelength, which makes the device of the present invention more versatile. The device of the present invention is not limited to a specific subset of wavelengths and further is not limited to detecting only the brightest of emissions, as would be the case with a modified Liang/Suzuki device.

10. The conventional wisdom in the security art is to detect emissions at the peak. To my knowledge, nothing in the prior art suggests the desire to be able to detect any light emission, including those that are non-peak emissions, as is now claimed.

11. All statements made of my own knowledge are true, and all statements made on information and belief are believed to be true. I am aware that willful false statements and the like are punishable by fine or imprisonment or both (18 U.S.C. 1001), and may jeopardize the validity of the above-referenced application or any patent issuing thereon.



Mohammad Farahat

September 7, 2005  
Date